

AMENDMENT TO THE CLAIMS

Claims 1-28 (Cancelled)

29. (Currently Amended) A method of endoscopic imaging comprising:

providing two-dimensional imaging sensor array and a lens on a distal end of an endoscope, a filter that spectrally resolves light that is detected by the imaging sensor array into a plurality of wavelengths, the filter being positioned at the distal end of the endoscope, the endoscope having a fiber optic cable extending from a proximal end of the endoscope to the distal end, the proximal end of the fiber optic cable being optically coupled to a laser radiation source or a broadband light source;

positioning the distal end of the endoscope adjacent to tissue to be examined;

irradiating a region of interest on the tissue with radiation from the laser radiation source or the broadband light source that is delivered through the fiber optic cable;

sensing endogenous fluorescence or Raman scattered light returning to the distal end of the endoscope with the filtered sensor array in response to the irradiation of the regions of interest with the radiation, the returning light

being directed onto the sensor array at the distal end of the endoscope with a lens;

generating an electronic representation of the region of interest with the sensor array; and

storing the representation in a computer electronic memory.

30. (Previously Presented) The method of Claim 29 further comprising: providing a laser radiation source and optically coupling the laser radiation source to the proximal end of the fiber optic cable.

31. (Cancelled)

32. (Previously Presented) The method of Claim 29 wherein the positioning step comprises inserting the distal end into a body lumen.

33. (Previously Presented) The method of Claim 29 further comprising forming an image of the region of interest.

34-35 (Cancelled)

36. (Previously Presented) The method of Claim 29 further comprising determining concentrations of plurality of tissue components.

37. (Cancelled)

38. (Previously Presented) The method of Claim 29 further comprising determining weight percentages of components of the tissue from the stored electronic representation.

39. (New) The method of Claim 29 further comprising using the electronic representation to determine a concentration of a tissue component in artery tissue.

40. (New) The method of Claim 29 further comprising determining a lipid component in the tissue.

41. (New) The method of Claim 29 further comprising determining a protein component in the tissue.

42. (New) The method of Claim 29 further comprising determining
a cholesterol component in the tissue.